## REMARKS

Amendments to the Claims

Claims 1, 2, 4, 6, 8, 10, 12, 14, 15, 22, 24 and 28 have been amended to further and more particularly define that which Applicants regard as their invention, and Claims 29 and 30 have been canceled. Specifically, Claims 1, 10, and 28 have been amended to remove non-elected sequences. Accordingly, Claim 11 which depends on Claims 10, need not be amended. Applicants note that Claim 6 is dependent on amended Claim 4, and, in light of the amendment to Claim 4, is in condition for allowance. Claims 14, 15, 22 and 24, although not elected for examination, have been amended in scope to correspond to the allowable product claims as amended herein (see below, Request for Rejoinder).

Support for amendments to the claims is found throughout the specification. For example, page 84, line 23 through page 85, line 2 describe possible lengths of oligonucleotides that include the range contained in the amended claims. Support for the "high stringency hybridization" language and use of sequences as primers can be found, for example, on page 11, line 28 through page 12, line 17; on page 54, line 21 through page 56, line 2; and on page 84, line 11 through page 85, line 13.

Priority claim

The Examiner asserts that Applicants did not comply with 35 U.S.C. §120 in claiming priority to U.S. Patent Application No.: 09/461,921, filed December 15, 1999, which is a Continuation-In-Part of U.S. Application 09/218,363, filed on December 22, 1998, which is a Continuation-In-Part of U.S. Application 09/099,454, filed on June 18, 1998, which claims the benefit of U.S. Provisional Application 60/050,244, filed on June 19, 1997. In particular, the Examiner states, "there is not copendency between the instant application and the earlier filed application [09/461,921]."

Applicants acknowledge an inadvertent lack of copendency of the present continuation-in-part application with the parent application, 09/461,921. Applicants note that a petition to revive an unintentionally abandoned application was filed for the parent application, said petition having been granted December 19, 2002, and a copy of the granted petition is submitted

herewith. Therefore, in light of the recently granted petition, Applicants submit that copendency occurred between the present application and the parent application sufficient to satisfy 35 U.S.C. §120. Therefore, Applicants are entitled to the original claim of priority as described on page 1 of the Specification.

Objection to Claims 1, 10, 11, 28, 29 and 30

The Examiner objects to Claims 1, 10, 11 and 28-30 because "they contain specific recitations of non-elected subject matter." (page 3 of the Office Action).

Applicants have amended Claims 1, 10, 28 and 29 to remove non-elected subject matter. Applicants note that Claims 11 and 30 depend on amended Claims 10 and 29, respectively, and, therefore, include the scope of the amended Claims. The objection has been obviated. Reconsideration and withdrawal of the objection are respectfully requested.

Objection to Claims 4, 6 and 8 under 35 C.F.R. 1.75(c)

The Examiner objects to Claims 4, 6 and 8 as being "of improper dependent form for failing to further limit the subject matter of a previous claim." (page 3 of the Office Action).

Applicants have amended Claims 4 and 8 such that they read in proper dependent form, *i.e.*, limiting the scope of the parent claim. Applicants note that Claim 6 depends on amended Claims 4, and, therefore, includes the scope of the amended Claim. The objection has been obviated. Reconsideration and withdrawal of the objection are respectfully requested.

Rejection of Claims 4, 6, 8 and 30 under 35 U.S.C. §112, Second Paragraph

The Examiner has rejected Claims 4, 6, 8 and 30 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that applicants regard as their invention. Specifically, the Examiner points out that Claims 4, 6 and 8 are "broader in scope than claim 2 from which they depend," and "[c]laim 30 is indefinite because reads [sic] 'the method of claim 29' but it depends from a product claim." Pages 3-4 of the Office Action.

Applicants have amended Claims 4 and 8 such that they read in proper dependent form, *i.e.*, limiting the scope of the parent claim. Applicants note that Claim 6 depends on amended

Claims 4, and, therefore, includes the scope of the amended Claim. Applicants have canceled Claim 30.

Therefore, the objections have been obviated. Reconsideration and withdrawal of the objections are respectfully requested.

Rejection of Claims 2, 4, 6, 8,12 and 28-30 under 35 U.S.C. §112, first paragraph

The Examiner has rejected Claims 2, 4, 6, 8, 12 and 28-30 under 35 U.S.C. §112, first paragraph, as containing subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Applicants have amended Claims 2, 4, 6, 8, 12 and 28-30. As amended, Claims 2, 4, 6, 8 and 12 do not recite the "% identity" limitation. The claims, as amended, refer to sequences that hybridize under high stringency conditions, to the intron sequences disclosed (and complementary sequences thereof, since one of skill in the art will easily recognize that disclosure of a single-strand nucleotide sequence also represents a disclosure of the complementary sequence). Furthermore, Applicants clearly instruct one of skill in the art how to design primers based on novel intron sequences (for example, on page 84, line 11 through page 85, line 13), that hybridize under high stringency conditions. As such, one of skill in the art would know how to use the full scope of the claimed invention based on the disclosure of the novel intron sequence (*e.g.*, to design a probe or primer that hybridized under high stringency conditions).

Applicants have also amended Claim 28, and canceled Claims 29 and 30. The Examiner states that "[t]he instantly disclosed SEQ ID NO: 30-39, 48-56 and 88-90 have their utility in the ability to detect the DYT1 gene which is associated with torsion dystonia" (page 6 of the Office Action). Claim 28, as amended, has incorporated these limitations, thereby obviating the rejection.

In light of the amendments and remarks, the rejection Claims 2, 4, 6, 8, 12 and 28-30 under 35 U.S.C. §112, first paragraph has been obviated. Reconsideration and withdrawal of the rejection are respectfully requested.

Rejection of Claims 2 and 8 under 35 U.S.C. §102(a)

The Examiner has rejected Claims 2 and 8 under 35 U.S.C. §102(a) as being anticipated by GenBank Record AL158207 (GI: 7160605). The Examiner acknowledges that this rejection is made "because priority was not granted in this application to 09/461921 because there was no copendency between the '921 application and the instant application." Page 8 of the Office Action.

As discussed above, Applicants have satisfied the requirements of 35 U.S.C. §120 with respect to copendency, and therefore are entitled to an earliest priority date of June 19, 1997. Therefore, the priority date of the present application precedes the publication date of GenBank Record AL158207 (GI: 7160605). However, the Examiner points out that even with the granting of the priority claim, the rejected claims would not be entitled to the earlier priority date. Applicants note, however, that Claims 2 and 8 have been amended to comprise sequences that hybridize under high stringency conditions to the novel sequences of the invention. Therefore, in light of Applicants' priority claim and amendments to Claims 2 and 8, the rejection is obviated. Reconsideration and withdrawal of the rejection are respectfully requested.

Rejection of Claims 2, 8 and 28-30 under 35 U.S.C. §102(b)

The Examiner has rejected Claims 2, 8 and 28-30 under 35 U.S.C. §102(b) as being anticipated by Ozelius *et al.* (1997, *Nature Genetics*, 7:40-48).

Applicants refer the Examiner to the comments provided above regarding the priority date of the application. Applicants have satisfied the requirements of 35 U.S.C. §120 with respect to copendency, and therefore are entitled to an earliest priority date of June 19, 1997. Applicants note, however, that Claims 2, 8 and 28 have been amended, and Claims 29 and 30 have been canceled. Claims 2, 8 and 28 comprise sequences that hybridize under high stringency conditions to the novel sequences of the invention. Therefore, in light of Applicants' priority claim and amendments to Claims 2 and 8, the rejection is obviated. Reconsideration and withdrawal of the rejection are respectfully requested.

Rejection of Claims 4 and 8 under 35 U.S.C. §102(b)

The Examiner has rejected Claims 4 and 8 under 35 U.S.C. §102(b) as being anticipated by Ozelius, L and Breakefield, X. (WO 98/57984).

Applicants refer the Examiner to the comments provided above regarding the priority date of the application. Applicants have satisfied the requirements of 35 U.S.C. §120 with respect to copendency, and therefore are entitled to an earliest priority date of June 19, 1997. Applicants further note that Claim 4, as amended, is dependent on Claim 1, and, therefore, does not contain the '90% identity' language. Applicants further note that Claim 8 has been amended to comprise polynucleotides that hybridize under high stringency conditions to SEQ ID NOS:48-56. Applicants also note that the teachings of WO 98/57984 do not include a teaching of the intron/exon boundaries, and, therefore, it would not have been obvious to one of skill in the art to practice the present claimed invention. Therefore, in light of Applicants' priority claim, amendments to the Claims and remarks, the rejection is obviated. Reconsideration and withdrawal of the rejection are respectfully requested.

Rejection of Claims 6, 10, 11 and 12 under 35 U.S.C. §103(a)

The Examiner has rejected Claims 6 and 10-12 under 35 U.S.C. §103(a) as being unpatentable over Ozelius, L and Breakefield, X. (WO 98/57984). The Examiner asserts that the teachings of WO 98/57984 teach an isolated nucleic acid molecule consisting of twenty or forty consecutive nucleotides from a sequence comprising a polynucleotide sequence at least 90% identical to one or more of SEQ ID NOS:48-56 and 88-90.

Applicants refer the Examiner to the comments provided above regarding the priority date of the application. Applicants have satisfied the requirements of 35 U.S.C. §120, and therefore are entitled to an earliest priority date of June 19, 1997. Therefore, the priority date of the present application precedes the publication date of WO 98/57984 (December 23, 1998). However, in light of the Examiner's note that the rejected claims would not be eligible for this priority date, Applicants note that Claim 6 is ultimately dependent on Claim 1, which has been amended. Claim 1 does not contain the '90% identical' language that Claim 2 previously had. Additionally, Applicants note that Claim 10 is directed to the specific sequences of SEQ ID NOS:30-39, and Claim 12, as amended, is directed to polynulceotides that hybridize, under high

stringency conditions, to SEQ ID NOS:30-39 or a complement thereof. Applicants also note that the teachings of WO 98/57984 do not include a teaching of the intron/exon boundaries, and, therefore, it would not have been obvious to one of skill in the art to practice the present claimed invention. Therefore, in light of Applicants' priority claim and amendments, the rejection is obviated. Reconsideration and withdrawal of the rejection are respectfully requested.

Applicants Respectfully Request Rejoinder of Claims 14-18 and 24-27

Applicant respectfully requests rejoinder of Claims 14-18 and 24-27. Under MPEP §821.04, if applicant elects claims directed to the product, and a product claim is subsequently found allowable, withdrawn process claims that depend from, or otherwise include all of the limitations of the allowable product claim will be rejoined. Claims 14 and 24 have been amended to include the limitations of Claim 10, thereby limiting the non-elected method Claims to a scope identical to the allowable product Claims, as amended herein. Claims 15-18 and 25-27 depend from Claims 14 and 24 respectively, and thus carry the same limitations.

CONCLUSION

The Examiner states that "Claim 1 would be allowable if the non-elected sequences were removed from the claim." Page 12 of the Office Action. Applicants have followed the Examiner's suggestion and have limited Claim 1 to elected sequences. Further, in view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned at (978) 341-0036.

Respectfully submitted,

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Dated: February 14, 2003




MARKED UP VERSION OF AMENDMENTS

Claim Amendments Under 37 C.F.R. § 1.121(c)(1)(ii)

1. (Amended) An isolated nucleic acid molecule selected from the group consisting of SEQ ID NOS: 48-56[48-63] and 88-90.

2. (Amended) An isolated nucleic acid molecule comprising a polynucleotide sequence that hybridizes under high stringency conditions [at least 90% identical] to a sequence selected from the group consisting of SEQ ID NOS: 48-56 [and], 88-90 and complementary sequences thereof.

4. (Amended) An isolated nucleic acid molecule consisting of about 15 to 50 consecutive nucleotides from a nucleotide sequence according to Claim 1[2].

8. (Amended) An isolated nucleic acid molecule comprising a polynucleotide sequence of about 20 to 50 nucleic acids that hybridizes under high stringency conditions [which is at least 80% identical] to a sequence according to Claim 1[2], or a complementary sequence thereof.

10. (Amended) An isolated nucleic sequence molecule selected from the group consisting of SEQ ID NOS: 30-39[30-47].

12. (Amended) An isolated nucleic sequence molecule consisting of a polynucleotide sequence that hybridizes under high stringency conditions [which is at least 90% identical] to a sequence selected from the group consisting of SEQ ID NOS: 30-39, or a complementary sequence thereof.

14. (Amended) A method of detecting the presence or absence of a mutation or a polymorphism in DYT1 [a neuronal gene] in a mammal, comprising the steps of:

(a) contacting a test sample comprising the neuronal gene with at least one nucleic acid sequence selected from the group consisting of SEQ ID NOS: 30-39 [30-47];

(b) maintaining the test sample DNA and the nucleic acid sequence under conditions suitable for interaction; and

(c) detecting the interaction between the test sample DNA and the nucleic acid sequences.

15. (Amended) The method of Claim 14, wherein the DYT1 [neuronal] gene is [selected from the group consisting of:] TOR1A[, TOR1B, TORP1, and TORP2].

22. (Amended) The method of Claim 14, further comprising the steps of:

(d) isolating the test sample DYT1 [neuronal] gene; and

(e) determining the sequence of the isolated gene.

24. (Amended) A method of detecting the presence or absence of torsin dystonia [a dopamine-mediated disease in] a mammal comprising detecting the presence or absence of one or more mutations in DYT1 [a neuronal gene], comprising the steps of:

(a) contacting a test sample comprising DYT1 [the neuronal gene] with a nucleic acid sequence selected from the group consisting of SEQ ID NOS: 30-39 [30-47];

(b) maintaining the test sample and the nucleic acid sequence under conditions suitable for interaction; and

(c) detecting the interaction between the test sample and nucleic acid sequence.

28. (Amended) A DYT1 gene comprising a gene mutation resulting in torsion dystonia [a dopamine-mediated disease] in a mammal detected by a method comprising the steps of:

(a) contacting a test sample comprising the gene with a nucleic acid sequence selected from the group consisting of SEQ ID NOS: 30-39[30-47];

(b) maintaining the test sample and the nucleic acid sequence under conditions suitable for interaction; and

(c) detecting the interaction between the test sample and nucleic acid sequence, wherein the gene mutation results in torsion dystonia [the dopamine-mediated disease].